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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/027,175	08/10/2001	Robert A. DiChiara JR	7784-000171	4647

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EXAMINER

BARR, MICHAEL E

ART UNIT	PAPER NUMBER
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1762

DATE MAILED 02/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Application No.

Applicant(s)

09 927,175

DICIARA, ROBERT A

Office Action Summary

Examiner

Art Unit

Michael Barr

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-14 and 20-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-14 and 20-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments and amendments, filed 1/22/03, have been fully considered and reviewed by the examiner. The examiner acknowledges the cancellation of Claims 1-8 and 15-19 and the addition of Claims 20-33. Claims 9-14 and 20-33 are pending.

The applicant has argued against the combination of DiChiara and Kourtides references since Kourtides teaches achieving thermal stability to 1650 °C, while Kourtides only achieves thermal stability to 2000 °F, and that one practicing DiChiara would not look to Kourtides as Kourtides would not achieve the desired thermal stability of DiChiara. The examiner is not persuaded by the applicant's argument. Since Kourtides teaches thermal stability to 1650 °C, which is about 3000 °F, one skilled in the art would have found it suggested to them that the Kourtides reference teaches would have been applicable the thermal stability desires of DiChiara, which are to 2000 °F. Furthermore, DiChiara teaches that the emissivity modifying agent can be molybdenum disilicide and Kourtides teaches that molybdenum disilicide, silicon carbide, silicon hexaboride, and silicon tetraboride are functionally equivalent as emissivity modifying agents for high temperature ceramics, such as those in DiChiara and Kourtides et al. Therefore, it would have been obvious to one skilled in the art to substitute silicon hexaboride or silicon tetraboride for the molybdenum silicide in the slurry of DiChiara, with the expectation of providing the functionally equivalent emissivity modifying properties to the slurry, since it is suggested by Kourtides that such material are substantially functionally equivalent as emissivity modifying agents for high temperature ceramics.

The applicant further argues that the references do not teach that the addition of the boron compound would achieve thermal stability at 2500 °F. While the references do not specifically teach thermal stability at 2500 °F, DiChiara does teach thermal stability at temperatures of at least 2000 °F or higher (Col. 3, lines 14-16) and Kourtides teaches thermal stability to temperatures of about 3000 °F, as indicated above. Furthermore, since the references teach the claimed process and materials, it would have been expected that the combination of DiChiara and Kourtides would also have the claimed properties of thermal stability at 2500 °F. The applicant has not provided any factual showing that this is not the case in such a combination. Furthermore, the applicant has not provided a convincing showing of unexpected results using the boron compound in the slurry. If anything, the applicants achieves the expected result, as Kourtides shows that the use of such emissivity agents, such as the boron compounds, achieve thermal stability to 3000 °F. Also, the applicant's showing in the specification (Examples) are not sufficient to indicate unexpected results, as the examples are not commensurate in scope with the claims, as the examples use specific materials, while the claims are broad. There is insufficient evidence to indicate unexpected results using materials commensurate in scope with the claims. Therefore, the examiner is not persuaded by the applicant's arguments and is maintaining the use of the references as previously set forth.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States

3. Claims 20, 22, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Kourtides et al.

Kourtides et al. teaches applying a protective coating to a ceramic article for use in high temperature environments, where the coating is applied by a silica containing aqueous slurry, which further contains an emissivity modifying agent, which can be molybdenum disilicide, silicon carbide, silicon hexaboride, or silicon tetraboride, and which further comprises alumina particles, which is a ceramic particle (Abstract; Col. 5, lines 5-50; Col. 6, lines 13-63). The silicon hexaboride and silicon tetraboride read on the claimed boron containing compound. The particle sizes in the slurry taught by Kourtides et al. would have been less than a 2 micron average.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9-14, 20-22, 24, and 26-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over DiChiara, Jr. et al. in view of Kourtides et al.

DiChiara, Jr. et al. and Kourtides et al. are applied here for the same reasons as given above and in paragraph 6 of the previous office action. DiChiara, Jr. et al. teaches solid particle sizes in the slurry of less than 2 microns and using heat lamps directed at the substrate to achieve

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the desired drying and firing over the entire substrate (Col. 4, line 63-Col. 5, line 2; Col. 6, lines 28-51).

6 Claims 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over DiChiara, Jr. et al. in view of Kourtides et al. and Baker et al.

DiChiara, Jr. et al., Kourtides et al., and Baker et al. are applied here for the same reasons as given above and in paragraph 7 of the previous office action.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Barr whose telephone number is 703-305 7919. The examiner can normally be reached on Monday-Thursday 6:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 703-308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 or 703-305-5408 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Michael Barr
Primary Examiner
Art Unit 1762

MB
February 10, 2003